PATENT ABSTRACTS OF JAPAN

(11)Publication number : 06-252057
(43)Date of publication of application : 09.09.1994

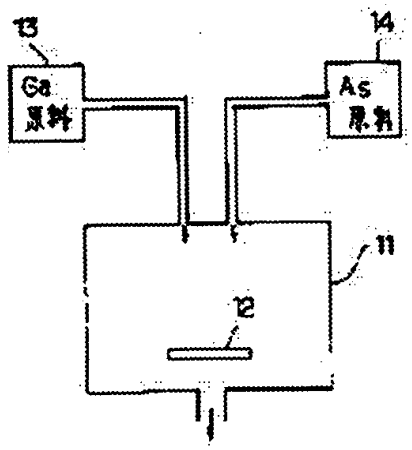
(51)Int.Cl. H01L 21/205
C23C 16/44

(21)Application number : 05-035114
(22)Date of filing : 24.02.1993

(71)Applicant : TOSHIBA CORP
(72)Inventor : HIRAOKA YOSHIKO
MASHITA MASAO

(54) MANUFACTURE OF SEMICONDUCTOR DEVICE

(57)Abstract:
PURPOSE: To form a compound semiconductor film including a group III element of an excellent quality more easily by using an organic metal raw material which comprises a dimer structure and also can reach a substrate surface as it keeps the dimer structure, as the raw material of III-group element.
CONSTITUTION: In the atomic layer epitaxy method, a group III element and a group V element are supplied alternately and a group IV atomic layer and a group V atomic layer are grown individually. In case of a GaAs semiconductor film, a substrate 12 is placed in a reactive furnace 11 and a Ga material container and an As material container 14 are connected to the furnace 11. As the Ga material definitely, an organic Ga compound which has high energy needed for dissolution from dimer to monomer is employed. The Ga material is diluted with a carrier gas and it is supplied to the reactive furnace 11. Also, for example, AsH3 is used as an As material. As a result, it becomes possible to form a film within a wider range of substrate temperature and such substrate temperature that a film of an excellent quality with few defects can be grown is predetermined.



LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

Copyright (C); 1998,2000 Japan Patent Office